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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,952	04/19/2001	Naoko Iwami	36992.00072	4508

30256 7590 08/31/2004	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P	NGUYEN, TRONG NHAN P	
600 HANSEN WAY	ART UNIT	PAPER NUMBER
PALO ALTO, CA 94304-1043	2152	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/839,952	IWAMI, NAOKO
	Examiner	Art Unit	
	Jack P Nguyen	2154	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 April 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-34_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-34_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-34 are being examined.

Specification

2. The disclosure is objected to because of the following informalities: in section

[0044] of the specification, applicant omits the following:

- Applicant states, "If the data packet is from a source external to the data center

    1013, then Otherwise..." Applicant fails to state the action for this step.

    Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Microsoft –

Understanding Network Address Translation, (hereafter Microsoft), 2/28/00, pages 1-3.

5.   As per claim 34, Microsoft teaches a method for managing storage, comprising:

receiving a data packet (page 2); searching for a virtual destination address retrieved

from said data packet (pages 2 and 3); reading a corresponding destination address for

a particular one of at least one of a plurality of devices that store information (pages 2

and 3); and replacing in said data packet said virtual destination address with said

corresponding destination address (pages 2 and 3).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 10, 15-17, 26, and 31-33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over De Vos, 6,192,454, (hereafter De Vos), in view of Microsoft.

8.   As per claim 10, De Vos teaches a storage apparatus comprising: a server (F1B,

E60), having a processor, a memory, and at least one port operative to connect to an

external network (fig. 1B, element 60; fig. 10, elements 68, 70, 61);

at least one of a plurality of devices that store information, each of said devices further

comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67); a switch

(F1B, E1); and an internal network connecting said server, said switch, and said at least

one of a plurality of devices that store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not teach wherein said server receives a data packet for storing, and

thereupon searches in said memory for a virtual destination address retrieved from said

data packet, and thereupon reads from said memory a corresponding destination

address for a particular one of said at least one of a plurality of devices that store

information, and thereupon replaces in said data packet said virtual destination address

with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by

gateways or routers in a Wide Area Network (WAN). For incoming data packets sent

from the Internet, the gateway receives data packets with virtual addresses from the

Internet and assigns corresponding the destination addresses that is known only by the

private network and delivers the data packets to its destination (pages 2-3). For

outgoing packets originated from the private network sent to the Internet, the reverse

address translations would take place. It would have been obvious to one of ordinary

skill in the art at the time of invention to modify De Vos by including the NAT

functionality to the gateway in view of Microsoft (pages 2-3). One of ordinary skill in the

art would have been motivated to combine the teachings of De Vos and Microsoft to

assign private addresses to public virtual addresses (and vice versa) to protect the

privacy of private networks by concealing the identity of private addresses from external

networks.

9.   As per claim 26, De Vos teaches a storage apparatus comprising: at least one of

a plurality of devices that store information (F1A, E20), each of said devices further

comprising at least one of a plurality of volumes, a processor, a memory, and at least

one port operative to connect to an external network (F1A, E20, E21; F2A, E22, E24,

E29); a switch (F1B, E1); a server (F1B, E60); and an internal network connecting said

server, said switch, and said at least one of a plurality of devices that store information

(F1B, E1, E60, E62, C2, L47-61);

De Vos does not teach wherein said at least one of a plurality of devices that store

information receives a data packet for storing, and thereupon searches in said memory

for a virtual destination address retrieved from said data packet, and thereupon reads

from said memory a corresponding destination address for a particular one of said at

least one of a plurality of devices that store information, and thereupon replaces in said

data packet said virtual destination address with said corresponding destination address

from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by

gateways or routers in a Wide Area Network (WAN). For incoming data packets sent

from the Internet, the gateway receives data packet with a virtual address from the

Internet and assigns corresponding the destination address that is known only by the

private network and delivers the data packet to its destination (pages 2-3). For outgoing

packets originated from the private network sent to the Internet, the reverse address

translations would take place. It would have been obvious to one of ordinary skill in the

art at the time of invention to modify De Vos by including the NAT functionality to the

gateway in view of Microsoft (pages 2-3). One of ordinary skill in the art would have

been motivated to combine the teachings of De Vos and Microsoft to assign a

destination address that corresponds to a virtual destination address when the data

packet enters the private network to conceal the identity of destination address from the

Internet.

10.   As per claims 15 and 31, De Vos does not teach the apparatus of claims 10 and

26, wherein said gateway searches in said data packet for a command and a virtual

private volume identifier, and if found, thereupon searches in said memory for a volume

identifier corresponding to said virtual private volume identifier, and thereupon replaces

said virtual private volume identifier in said data packet with said volume identifier.

Microsoft teaches the concept of network address translation (NAT) for use by

gateways or routers in a Wide Area Network (WAN). The gateway receives data packet

with a virtual address from the Internet and assigns corresponding the destination

address that is known only by the private network and delivers the data packet to its

destination (pages 2-3). It would have been obvious to one of ordinary skill in the art at

the time of invention to modify De Vos by including the volume identifier translation

(NAT-like) functionality to the volume identifier in view of Microsoft (pages 2-3). One of

ordinary skill in the art would have been motivated to combine the teachings of De Vos

and Microsoft to assign a volume identifier that corresponds to a virtual volume identifier

when the data packet enters the private network to conceal the identity of volume

identifier from the Internet.

11.   Claims 16 and 32 are rejected on the same basis as claim 10 and 26 but in

reverse address translation order.

12.   As per claims 17 and 33, De Vos teaches the apparatus of claims 10, and 26,

wherein said gateway authenticates a source of said data packet based upon a user

address in said data packet (F1B, E60, C1, L11-15; C2, L47-67; C3, L37-40; C4, L5-12.

The gateway (ATM switch), via the system manager, sends requested data to

authorized recipients requesting the data.)

13.   Claims 1-3, 7-9, 18, 23-25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over De Vos, in views of "Official Notice" and Microsoft.

14.   As per claim 1, De Vos teaches a storage apparatus comprising: a gateway (fig.

1B, element 1, col. 2, lines 47-67; col. 8, lines 43-50. *Over networks where a plurality of*

ATM switches are used to for high speed data routing and transmission, ATM switches

perform protocol translations and route data packets between the networks. Thus they

are functionally equivalent of a gateway), having a processor, a memory, and at least

one port operative to connect to an external network (fig. 1B, element 1. *DeVos shows*

an ATM switch that has at least one port to connect to external network, but does not

explicitly show a memory and processor in the drawing. "Official Notice" is taken by the

examiner that the said devices also comprise a processor and memory and is well

known in the art. It is obvious to one of ordinary skill in the art to know that a computer,

such as the ones mentioned above, would have these components to perform their

functions);

at least one of a plurality of devices that store information, each of said devices further

comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67); a server

(F1B, E60, C3, L37-40); a switch (F1B, E1); and an internal network connecting said

gateway, said server, said switch, and said at least one of a plurality of devices that

store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not explicitly teach wherein said gateway receives a data packet for

storing, and thereupon searches in said memory for a virtual destination address

retrieved from said data packet, and thereupon reads from said memory a

corresponding destination address for a particular one of said at least one of a plurality

of devices that store information, and thereupon replaces in said data packet said virtual

destination address with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). For incoming data packets sent from the Internet, the gateway receives data packet with a virtual address and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). For outgoing packets originated from the private network sent to the Internet, the reverse address translations would take place. It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the NAT functionality to the gateway in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign a destination address that corresponds to a virtual destination address when the data packet enters the private network to conceal the identity of destination address from the Internet.

15.   As per claim 18, De Vos teaches a storage apparatus comprising: a switch (F1B, E1), having a processor, a memory, and at least one port operative to connect to an external network (fig. 1B, element 1. *DeVos shows an ATM switch that has at least one port to connect to external network, but does not explicitly show a memory and processor in the drawing. "Official Notice" is taken by the examiner that the said devices also comprise a processor and memory and is well known in the art. It is obvious to one of ordinary skill in the art to know that a computer, such as the ones mentioned above, would have these components to perform their functions);*

at least one of a plurality of devices that store information, each of said devices further

comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67);

a server (F1B, E60); and an internal network connecting said server, said switch, and

said at least one of a plurality of devices that store information (F1B, E1, E60, E62, C2,

L47-61);

De Vos does not teach wherein said switch receives a data packet for storing, and

thereupon searches in said memory for a virtual destination address retrieved from said

data packet, and thereupon reads from said memory a corresponding destination

address for a particular one of said at least one of a plurality of devices that store

information, and thereupon replaces in said data packet said virtual destination address

with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by

gateways or routers in a Wide Area Network (WAN). For incoming data packets sent

from the Internet, the gateway receives data packet with a virtual address from the

Internet and assigns corresponding the destination address that is known only by the

private network and delivers the data packet to its destination (pages 2-3). For outgoing

packets originated from the private network sent to the Internet, the reverse address

translations would take place. It would have been obvious to one of ordinary skill in the

art at the time of invention to modify De Vos by including the NAT functionality to the

switch in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been

motivated to combine the teachings of De Vos and Microsoft to assign a destination

address that corresponds to a virtual destination address when the data packet enters

the private network to conceal the identity of destination address from the Internet.

16.   As per claims 2 and 25, De Vos teaches the apparatus of claims 1 and 18,

wherein said gateway authenticates a source of said data packet based upon a user

address in said data packet (F1B, E60, C1, L11-15; C2, L47-67; C3, L37-40; C4, L5-12.

The gateway (ATM switch), via the system manager, sends requested data to

authorized recipients requesting the data.)

17.   As per claim 3, De Vos teaches the apparatus of claim 1, wherein said external

network comprises a virtual private network (VPN), and wherein said gateway performs

VPN processing for said data packet (C2, L47-67; C4, L5-12. *The gateway sets up a*

virtual private path to send data packets from the source to the recipient across the

networks.)

18.   As per claims 7 and 23, De Vos does not teach the apparatus of claims 1 and 18,

wherein said gateway searches in said data packet for a command and a virtual private

volume identifier, and if found, thereupon searches in said memory for a volume

identifier corresponding to said virtual private volume identifier, and thereupon replaces

said virtual private volume identifier in said data packet with said volume identifier.

Microsoft teaches the concept of network address translation (NAT) for use by

gateways or routers in a Wide Area Network (WAN). The gateway receives data packet

with a virtual address from the Internet and assigns corresponding the destination

address that is known only by the private network and delivers the data packet to its

destination (pages 2-3). It would have been obvious to one of ordinary skill in the art at

the time of invention to modify De Vos by including the volume identifier translation

(NAT-like) functionality to the volume identifier in view of Microsoft (pages 2-3). One of

ordinary skill in the art would have been motivated to combine the teachings of De Vos

and Microsoft to assign a volume identifier that corresponds to a virtual volume identifier

when the data packet enters the private network to conceal the identity of volume

identifier from the Internet.

19.   Claims 8 and 24 are rejected on the same basis as claims 1 and 18, but in

reverse address translation order.

20.   As per claim 9, De Vos teaches the apparatus of claim 1, wherein said virtual

destination address and said destination address are stored in a table (C2, L61-67.)

21.   Claims 11-14 and 27-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over De Vos, in views of Microsoft and ATM Forum White Papers, "Multi-

Protocol Over ATM (MPOA)", (hereafter MPOA), 1997, pages 1-3.

22.   As per claims 11 and 27, De Vos and Microsoft teach the apparatus of claims 10

and 26, wherein said external network uses a first protocol and said internal network

uses a second protocol, and wherein said gateway translates said data packet from said

first protocol to said second protocol (De Vos, F1B, C8, L43-49. *One network may use*

ATM protocol while another network may use the same or different protocol.)

Furthermore, MPAO teaches ATM switches can be used to translate different protocols

between different networks over wide area network (WAN) and is functionally equivalent

to a gateway or router (pages 1-3*).* It is obvious to one of ordinary skill in the art to be

motivated to use ATM switches to connect different networks in the WAN that are

functionally equivalent to gateways.

---

23.   As per claims 12, 13, 28 and 29, De Vos teaches the apparatus of claims 11 and

27, wherein said first protocol comprises at least one of IP protocol, ATM, and Fibre

channel and second protocol comprises at least one of IP protocol, ATM, and Fibre

channel (C2, L47-67. *See paragraph 22 for more details.)*

24.   As per claims 14 and 30, De Vos teaches the apparatus of claims 11 and 27,

wherein said external network comprises a virtual private network (VPN), and wherein

said gateway performs VPN processing for said data packet (C2, L47-67; C4, L5-12.

The gateway sets up a virtual private path to send data packets from the source to the

recipient across the networks.)

25.   Claims 4-6 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, in views of "Official Notice", Microsoft, and MPOA.

26.   As per claims 4 and 19, De Vos, "Official Notice", and Microsoft teach the apparatus of claim 1 and 18, wherein said external network uses a first protocol and said internal network uses a second protocol, and wherein said gateway translates said data packet from said first protocol to said second protocol (F1B, C8, L43-49. *One network may use ATM protocol while another network may use the same or different protocol.*) Furthermore, MPAO teaches ATM switches can be used to translate different protocols between different networks over wide area network (WAN) and is functionally equivalent to a gateway or router (pages 1-3). It is obvious to one of ordinary skill in the art to be motivated to use ATM switches to connect different networks in the WAN that are functionally equivalent to gateways.

27.   As per claims 5, 6, 20, and 21, De Vos teaches the apparatus of claims 4, 11, 19, and 27, wherein said first protocol comprises at least one of IP protocol, ATM, and Fibre channel and second protocol comprises at least one of IP protocol, ATM, and Fibre channel (C2, L47-67. *See paragraph 27 for more details.*)

28.   As per claim 22, De Vos teaches the apparatus of claim 19, wherein said external network comprises a virtual private network (VPN), and wherein said gateway performs VPN processing for said data packet (C2, L47-67; C4, L5-12. *The gateway*

sets up a virtual private path to send data packets from the source to the recipient

across the networks.)

Conclusion

29.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- Real Time Local and Remote Management of Data Files and Directories and

  Method of Operating the Same – Chow et al, 6,745,310

- Method and System For Accessing a Remote Storage Area – Prust, 6,735,623

- Multimedia File Systems Using File Managers Located on Clients For Managing

  Network Attached Storage Devices – Mukherjee et al, 6,466,978

- Virtual Volume Storage – Watanabe et al, 6,748,502

- Virtual Ports For Data Transferring of a Data Storage System – Blumenau et al,

  6,421,711

- System and Method For Accessing a Storage Area Network as Network

  Attached Storage – Padovano, 6,606,690

30.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jack P Nguyen whose telephone number is (703) 605-

4299. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

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